

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2003-282513

(43)Date of publication of application : 03.10.2003

(51)Int.Cl.

H01L 21/304

B01J 4/00

B01J 19/10

H01L 21/027

H01L 21/306

(21)Application number : 2002-085385

(71)Applicant : SEIKO EPSON CORP

(22)Date of filing : 26.03.2002

26.03.2002

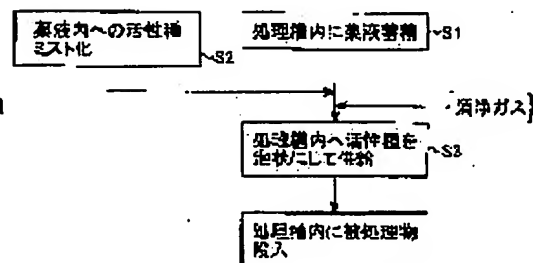
(72)Inventor : SHINDO AKINORI

## (54) ORGANIC SUBSTANCE SEPARATION METHOD AND ORGANIC SUBSTANCE SEPARATION EQUIPMENT

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an organic substance separation method and organic substance separation equipment wherein the life time of a chemical solution is prolonged and highly effective treatment is performed in organic substance elimination.

SOLUTION: A prescribed chemical solution is stored in a treatment tank in which an organic substance is separated (treatment S1), while a solution which is added as an active species to the chemical solution is turned into mist in the other tank (treatment S2). The mist solution is mixed with cleaning gas and supplied to the treatment tank becoming a foam state (treatment S3). In this state, an object to be treated is loaded in the treatment tank, and separation treatment of an organic substance is performed. This method can be applied to an object wherein the organic substance is desired to be eliminated, e.g. a semiconductor wafer wherein a resist layer



should to be exfoliated is stuck, a semiconductor wafer wherein particles should to be exfoliated are stuck, other worked products, components in various kinds of manufacturing equipment, etc. The chemical solution is, e.g. a sulfuric acid-hydrogen peroxide water mixed solution, and the solution which is to turn into mist is hydrogen peroxide water.

---

## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

**\* NOTICES \***

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

**CLAIMS**

---

**[Claim(s)]**

[Claim 1] The organic substance exfoliation approach characterized by Myst-izing the liquid which should be added as active species, and supplying it with clarification gas in the drug solution stored in the processing tub which exfoliates the organic substance at least.

[Claim 2] The organic substance exfoliation approach characterized by providing the process which stores a drug solution in the processing tub which exfoliates the organic substance at least, the process which Myst-izes the liquid which should be added as active species in said drug solution, and the process which said Myst-ized liquid is mixed with clarification gas, and makes the shape of a bubble and is supplied into said processing tub.

[Claim 3] The process which Myst-izes said liquid is the organic substance exfoliation approach according to claim 2 characterized by being attained by impressing a supersonic wave in said processing tub exterior.

[Claim 4] It is the organic substance exfoliation approach of any one publication among claims 1-3 characterized by for said drug solution being mixed liquor of a sulfuric acid and hydrogen peroxide solution, and said Myst-ized liquid being hydrogen peroxide solution.

[Claim 5] Organic substance exfoliation equipment characterized by to provide the processing tub which stores the drug solution which exfoliates the organic substance at least, the Myst-ized device which Myst-izes the liquid which should be added as active species in said drug solution, and the foamy feeder style by which clarification gas is given to said Myst-ized device and said Myst-ized liquid is supplied into said processing tub with clarification gas.

[Claim 6] Said Myst-ized device is organic substance exfoliation equipment according to claim 5 characterized by including the ultrasonic impression device which Myst-izes the liquid in a tub other than said processing tub in which said liquid is stored, and this tub.

[Claim 7] Said foamy feeder style is organic substance exfoliation equipment according to claim 5 characterized by including the path which connects said Myst-ized device to a supply plate with two or more apertures prepared in said processing tub, and this supply plate.

[Claim 8] It is organic substance exfoliation equipment of any one publication about the drug solution in said processing tub among claims 5-7 characterized by having the circulator style accompanied by fill tray SHON at least.

[Claim 9] It is organic substance exfoliation equipment of any one publication among claims 5-7 to which the mixed liquor of a sulfuric acid and hydrogen peroxide solution is stored in said processing tub as a drug solution, and hydrogen peroxide solution is characterized by carrying out specified quantity supply at said Myst-ized device as said liquid Myst-ized.